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NOTICE OF ALLOWANCE AND FEE(S) DUE

05514 7590 04/08/2004

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

FLORES RUIZ, DELMA R

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 04/08/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/494,945	02/01/2000	Tadahiro Ohmi	862.C1811	4149

TITLE OF INVENTION: LASER OSCILLATING APPARATUS, EXPOSURE APPARATUS USING THE SAME AND DEVICE FABRICATION METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1330	\$0	\$1330	07/08/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

☐ Applicant claims SMALL ENTITY status.
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail

**Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (703) 746-4000**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

05514 7590 04/08/2004

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	NO	\$1330	\$0	\$1330	07/08/2004

EXAMINER	ART UNIT	CLASS-SUBCLASS
FLORES RUIZ, DELMA R	2828	372-050000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent); ☐ individual ☐ corporation or other private group entity ☐ government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
- ☐ Publication Fee
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

Director for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature)	(Date)
<p>NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.</p> <p>This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Alexandria, Virginia 22313-1450.</p> <p>Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.</p>	

TRANSMIT THIS FORM WITH FEE(S)



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05514	7590	04/08/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			FLORES RUIZ, DELMA R	
			ART UNIT	PAPER NUMBER
			2828	
DATE MAILED: 04/08/2004				

Determination of Patent Term Extension under 35 U.S.C. 154 (b) (application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability

Application No.

09/494,945

Examiner

Delma R. Flores Ruiz

Applicant(s)

OHMI ET AL.

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/20/2004.
2. ☒ The allowed claim(s) is/are 19-31, 34-37, 39-49, 53, 55, 57-66, 109 and 110.
3. ☒ The drawings filed on 2/01/2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

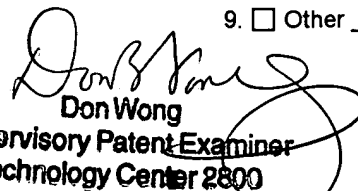
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Don Wong
Supervisory Patent Examiner
Technology Center 2800

DETAILED ACTION

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance: claim 19 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: **laser tube which is filled with a laser gas; and a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots, wherein the width of longitudinal end portions of each of said slots are made larger than the width of a central portion thereof.**

The following is an examiner's statement of reasons for allowance: claim 22 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: **a laser tube which is filled with a laser gas; and a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots, wherein said slots are formed apart from a central axis along a longitudinal direction of said waveguide and each of said slots is curved such that longitudinal end portions of the slot are closer to the central axis than a central portion of the slot.**

The following is an examiner's statement of reasons for allowance: claim 25 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: a **laser tube which is filled with a laser gas; and a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots, wherein an air-gap of resonating electromagnetic waves to be radiated from said slot to increase radiation efficiency is formed in said waveguide wall in which said slots are formed. said air gap being in flow communication with a slot and wider than an opening of that slot.**

The following is an examiner's statement of reasons for allowance: claim 31 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: a **laser tube which is filled with a laser gas; and a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots, wherein each of said plurality of slots has a tapered shape on a cross section parallel to the direction of introduction of an electromagnetic wave, whose sectional shape narrows toward said laser tube.**

The following is an examiner's statement of reasons for allowance: claim 35 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: a laser tube which is filled with a laser gas; and a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots, wherein the widths of end portions in a longitudinal direction of each of said slots are made smaller than the width of a central portion thereof.

The following is an examiner's statement of reasons for allowance: claim 37 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: a laser tube which is filled with a laser gas; and a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots, wherein the length of said waveguide is substantially equal to an integer multiple of a half-wavelength of the electromagnetic wave in said waveguide so as to form a standing wave and each of said slots is formed so as to make the center of the slot substantially coincident with a node of the standing wave.

The following is an examiner's statement of reasons for allowance: claim 42 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: a laser tube which is filled with a laser gas;

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots; and a shielding structure provided in said laser tube and formed on said waveguide wall in which said slots are formed for shielding each of the electromagnetic waves emitted from said slots in order to prevent plasma generated by the electromagnetic waves from diffusing.

The following is an examiner's statement of reasons for allowance: claim 53 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: **a laser tube which is filled with a laser gas; and a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots, wherein a plurality of slots are arranged in the short-side direction of the waveguide to form a row of slots, and a plurality of the rows are disposed in the long-side direction of the waveguide.**

The following is an examiner's statement of reasons for allowance: claim 58 has been allowed over the prior art because they fail to teach a laser oscillating apparatus for generating a laser beam comprising: **a laser tube which is filled with a laser gas; and a pair of waveguides, each of which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube**

through said slots, wherein said pair of waveguides sandwich said laser tube and are constructed such that intensity distributions of electromagnetic waves introduced therefrom are shifted from each other.

Claims 20 – 21, 23 – 24, 26 – 30, 34, 36, 39 – 41, 43 – 49, 53, 59 – 66 and 109 - 110 has been found allowable due to their dependency on claims 19, 22, 25, 31, 35, 37, 42, 53 and 58.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reason for Allowance".

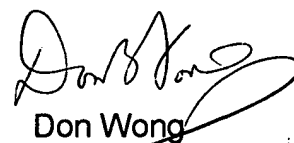
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) -272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Delma R. Flores Ruiz
Examiner
Art Unit 2828
DRFR/PI
March 22, 2004


Don Wong
Supervisor Patent Examiner
Art Unit 2828